

REMARKS

Status of the Application

Prior to the entry of this amendment, claims 1 and 12 were pending in this application. In the Office Action, claims 2-10 were objected to for being improperly marked to reflect the amendments made to the claims in the response, claims 1-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,639,871 to Garotta ("Garotta"), claims 1-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 20030021184 to Zhang ("Zhang"), claims 1-3, 8-10 and 12 were rejected under 35 U.S.C. § 102(a) as being anticipated by International Patent Application No. WO 0131364 to Audebert ("Audebert") and claims 1-3 and 12 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,067,275 to Sayers ("Sayers").

The present amendment amends claims 1-10 and 12. Therefore, claims 1-10 and 12 are presented for examination in this amendment. No new matter is added by the amendments to claims 1-10 and 12. Applicants respectfully request reconsideration of this application as amended.

Claims Objections

In the Office Action, claims 2-10 were objected to for being improperly marked with regard to the amendments made to the claims. Applicants have treated the improperly marked portions of the prior amendments as not having been entered in the case and have correctly marked the language added to the claims in the previous response in the above listing of claims.

Rejections under 35 U.S.C. § 102

In the Office Action, claims 1-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by Garotta, claims 1-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by Zhang, claims 1-3, 8-10 and 12 were rejected under 35 U.S.C. § 102(a) as being anticipated by Audebert and claims 1-3 and 12 were rejected

under 35 U.S.C. § 102(b) as being anticipated by Sayers. Reconsideration of these rejections is respectfully requested in light of the following remarks.

Independent claims 1 and 12 of the present application describe a passive seismic monitoring system and method in which each independent claim contains the limitation of "calculating an estimated time of origin for the seismic or the microseismic event."

The Garotta reference describes an active seismic processing method in which a seismic disturbance is generated and the results of the generated seismic disturbance are analyzed to interpret the geology of the subsoil. (*See* Garotta at Col. 1, line 1 through Col. 2, line 52). Garotta does not disclose calculating an estimated time of origin of a seismic or microseismic disturbance. To the contrary, in Garotta the seismic disturbance is generated in the described active seismic process so the time of origin of the generated seismic disturbance is known.

Zhang, like Garotta, describes an active seismic surveillance system in which seismic energy is imparted into the earth and traces of the reflections from the subsurface are recorded and analyzed. (*See, e.g.*, Zhang ¶ 6). As with Garotta, in the active seismic system of Zhang, because the seismic energy is injected into the earth, the time at which the seismic energy originates is known. Thus, Zhang does not teach or suggest the limitation of calculating the time of origin of a seismic event of the independent claims.

Audebert, like Garotta and Zhang, discloses an active seismic method in which a seismic event is generated – emitting a compressional seismic wave underground – and the signal from the generated seismic event is detected and analyzed. (*See* Audebert, Abstract). Again, as with Garotta and Zhang, because Audebert is an active seismic method, the seismic event is a generated event that has a known time of occurrence/origin. Consequently, as with Garotta and Zhang, the Audebert reference does not teach or disclose calculating an estimated time of origin for a seismic or a microseismic event.

Finally, the Sayers reference, like Garotta, Audebert and Zhang teaches an active seismic surveying process in which a seismic source generates a seismic event and the signal from the generated seismic event is subsequently analyzed. (*See, e.g.* Sayers at Col. 1, line 39 through Col. 3, line 12). As such, Sayers does not teach the passive seismic system of independent claims 1 and 12 of the present application in which the estimated time of origin of a seismic event is calculated.

For the foregoing reasons, Applicants respectfully submit that none of the cited references teach or disclose all of the limitations of independent claims 1 and 12 of the present application. Consequently, Applicants respectfully request that the rejections of independent claims 1 and 12 and the claims depending from them be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

In the event that a fee or refund is due in connection with this Amendment, the Commissioner is hereby authorized to charge any underpayment or credit any overpayment to Deposit Account No 19-0615. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (617) 768-2270.

Respectfully submitted,


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